

COST AND MANAGEMENT

PROFIT

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Profit Opportunities . . .

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on Capital Employed . . .

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Business Development
and New Financing . . .

By J. G. Chaston

LOSS

Official Journal of
**The Society of Industrial and
Cost Accountants of Canada**

JULY-AUG., 1957

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- devising and giving effect to better management methods, and
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RECOGNIZING AND EVALUATING PROFIT OPPORTUNITIES

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Mr. Capon, formerly Treasurer of C.I.L., became Secretary and Treasurer of Du Pont of Canada Securities Ltd., and Du Pont Company Ltd. on the division of C.I.L. in 1954. Recently appointed a Director of the company, he continues as Treasurer. Born and educated in England, he came to Canada in 1930, joining a firm of Chartered Accountants in Montreal where he became a member of the Quebec Institute.

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The author of numerous pioneering books and articles on management problems, Dr. Dean is a graduate of the Harvard Graduate School of Business Administration and the University of Chicago. He is Professor of Business Economics in the Graduate School of Business, Columbia University, as well as President of an economic and management consulting firm serving some of the largest and most distinguished companies in the United States.

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Mr. Chaston is Secretary-Treasurer and heads the Underwriting Department of Pemberton Securities Limited, Vancouver. He has been a partner of the firm since 1952. A native of Calgary, he was admitted to the Alberta Institute of Chartered Accountants in 1939 and to the British Columbia Institute in 1946 on taking up residence in Vancouver.

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Our New President . . .



M. C. Coutts, R.I.A., of Toronto, was elected president of the Society of Industrial and Cost Accountants of Canada at its 36th annual Cost and Management Conference recently held at Banff Springs Hotel, Banff, Alberta.

Mr. Coutts, who is a director and vice-president in charge of production of Sangamo Company, Leaside, has also been active in the affairs of the Ontario Society and was president of that body for 1952-53. He is a former vice-president of the Canadian Society. A graduate of the University of Toronto and a graduate in engineering of the Massachusetts Institute of Technology, he received his R.I.A. degree in 1942.

His familiarity with the work of the Society at national and provincial levels and his broad executive experience will enable Mr. Coutts to lend forceful leadership to the expanded programme of S.I.C.A. activities.

Also elected to office were: Vice-Presidents—T. B. Milne, Assistant Comptroller, Great West Life Assurance Co., Winnipeg, Manitoba; T. A. Kennedy, Managing Director, Pacific Coast Pipe Co., Vancouver, B.C.; G. H. Greenhough, Secretary-Treasurer and Director, Reid Press Limited, Hamilton, Ontario; Honorary Treasurer—W. W. B. Dick, Hudson, McMackin Co., Moncton, N.B.; Executive Vice-President—J. Nelson Allan, Hamilton, Ontario.

Editorial Comment . . .

IS EVOLUTION IN ACCOUNTING IMMINENT?

Political Science tells us that revolutions occur if governing forces in a country do not pay sufficient attention to the trends in public opinion and resist evolutionary changes to the point of suppression.

The following statement is intended to be provocative as it dares to advocate radical changes in the general approach by the accounting profession, which does not permit, in its hardened attitude, accommodation to the profound changes which have taken place in our social structure and our economic conditions. The senior accounting bodies in the United States and in Canada, The American Institute of Accountants (since June 3, 1957, The American Institute of Certified Public Accountants) and the Canadian Institute of Chartered Accountants, determined in the form of bulletins on accounting procedure certain "principles" to which not only accountants in industry and business, but also regulatory bodies like the S.E.C. in the United States and the various Securities Commissions in Canada adhere.

Although certain established concepts of the accounting profession have been attacked during the last decade, no positive leadership in making changes has been forthcoming. Such problems as monetary stability in financial reporting remain largely unsolved. No lesser authority than George O. May, one of the leaders of the profession, in the June, 1957 issue of *The Journal of Accountancy*, in a searching article "Income Accounting and Social Revolution", which is the introductory chapter from a new book (to be published by McMillan next Fall) examines the concept of business income and the attitude of the accounting profession to this concept. Mr. May looks at the users of the income statement and their effect on the market for investment securities, in the field of governmental regulation, on taxation and last, but not least, on the national income statistics. According to Mr. May, S.E.C. legislation and the trend of corporate development have together created a division of corporations into two great groups; a division which was long overdue, but the existence of which received too little recognition, i.e., the corporations operating on a national scale and the smaller local enterprises, which should not be required to adhere to the same standards of reporting as the first category.

According to Mr. May, the accounting profession should recognize the need for creating gradually a philosophy or mode of thought in the area of ascertaining periodical income of business and should re-examine existing conditions and practices in the light of today's conditions. Mr. May adopts four assumptions which are worthwhile quoting:

1. That no definition of income can be politically acceptable unless under it interest on the national debt is income to a

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national (either as accrued or as received) measurable in terms of the legal tender receivable.

2. That the first assumption does not stand in the way of a requirement that when income is an excess of revenue over costs, both should be expressed in units of the same purchasing power.
3. That a major objective of national policy is to reduce inequalities in the distribution of wealth and income.
4. That, broadly speaking, major enterprises are and will be conducted in corporate form."

Particularly the first assumption seems original and Mr. May remarks that, although business-income accounting is depicted as a political prisoner, much valuable interpretive work has been and still may be done in prison!

It will be very interesting to read Mr. May's book, but in the meantime, his second assumption seems to be of immediate major importance for the accounting profession on this continent. It indicates, in fact, that the pressure for a new approach to the concept of the stability of the monetary unit has increased to the point where revolution could conceivably replace an orderly evolution to advanced thinking in this direction. The new function of Planning and Control in industry and business requires a more flexible approach to measuring capital invested, capital employed and income than permitted by the straight jacket of our conventional public accounting principles. A few years ago, it looked possible that the senior accounting bodies would recommend strongly obligatory Notes to Financial Statements which would disclose the distortions brought about by the diminishing purchasing power of the dollar, but no courageous progress in this direction has since become noticeable.

If the lead will not come from authoritative sources, we may witness a revolutionary breaking away by management accounting in industry and commerce from docilely accepting the 1957 dollar as equal to the 1940 or, still worse, the 1914 dollar. An equalization of fixed asset valuations for performance measurement at least in intra-company and inter-divisional accounting becomes more and more unavoidable. How can we expect the fiction of the stability of the dollar to be discarded by our tax law-makers if we do not even dare to deviate from this fictitious concept for our internal accounting purposes?

Mr. May's statement may be a last warning before the storm. Who will be the first to take up the challenge? Controllers, the National Association of Cost Accountants (recently renamed National Association of Accountants) or our own Society of Industrial and Cost Accountants in Canada?

GEORGE MOLLER

C. & M. Round-Up . . .

By N. R. BARFOOT

LOOKING AHEAD

New products will be responsible for 30 to 80 percent of the growth of major manufacturing companies in the next three years. This is the finding of a recent study by management Consulting firms.

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Electrical capacity will increase 47% between now and 1960. Construction of facilities to produce 7.1 million kilowatts is planned during that period.

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The Octane Race is on. By 1965 it is predicted that 107 Octane Premium Fuel and 98 Octane Regular will be in effect. It will cost more to make and you will get 12.1 compression ratio in your engine.

OF GENERAL INTEREST PRODUCTIVITY

Statistics on productivity are sparse and confusing, but generally it is estimated that productivity of industry on this continent increased on an average of 2.5% a year from 1909 to 1947.

From 1947 to 1953 productivity of bench workers in manufacturing increased between 3 and 3.6% per year. In 1954 and 1955 the rate of increase goes to 4.5%. In 1956 it dropped sharply between 1 and 2.5%.

Unfortunately, these figures do not include non-production workers who are a break on the increase of productivity. The number of white collar and other service employees per production worker is on the increase. If all factory employees were counted in, it would be necessary to subtract at least 1% from the manufacturing and productivity gains for 1955 and 1956.

However, productivity has never risen at a steady rate. It is estimated that between 1910 and 1953, there were eleven years that productivity actually fell. It was down during wartime due to the disruption in flow of materials and manpower. Even plants operating at top capacity find it hard to raise output.

An enormous number of men, money and skills were diverted from current production in this last year to prepare for new plants and equipment. The benefits of this, like the benefits of other billions spent on expansion in the last five years will take a long time to realize.

It seems apparent that the benefits of increased productivity must be divided among labour, investors and consumers. Any attempt by any group to grab the total increase of productivity leads to price inflation and/or shrinkage of the total market.

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INDUSTRIAL PSYCHOLOGY

Human Relations, the application of formal psychology to business situations and business people has become a very important part of modern business management. In the opinion of some men, far too much so. The following points may be of interest:

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There is a danger that the development of skills in human relations may become too scientific and will be treated as cold-blooded, technical, expert manipulation of people.

Undue pre-occupation with the study of human relations saps individual responsibility. It leads away from thinking about the job to be done and leads only to thinking about people and their relationships to others.

Most great advances are made by individuals. Devoting too much effort to trying to keep everybody happy results in conformity and in failure to develop individuals.

It has become the fashion to decry friction, but friction has many uses. The present day emphasis on bringing everyone along can easily lead to a deadly level of mediocrity.

The development of a yen for managing other people's lives can be a dangerous thing and lead to amateur psychiatry and unwarranted invasion of the privacy of individuals.

The over emphasis of human relations with its courses and special vocabulary tends to create the very problems human relations deals with. Many foreman and executives come out of the human relations course poorer practitioners than they were before.

Perhaps it should not be taught at all. There is no substitute for administrative leadership. There is a danger that young business men will think that business administration consists primarily of batteries of experts, operations research, mathematics, theory of games, equipped with a Univac and presided over by smart human relations men.

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ON THE PERSONAL SIDE

Chartered Air Flights to Europe are in vogue this summer. Fares on such safari are as low as \$285 return. More and more people are getting interested in private chartered flights.

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Colour T.V. will be offered this Christmas for around \$600 in Canada, instead of the present \$750. The new lower cost colour tube has been invented and will be produced very soon.

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Fly-Yourself Aeroplane Rentals is beginning this fall. A prominent corporation with car rental facilities in some 900 cities plans to begin renting aeroplanes. The rates are likely to average \$1.00 per hour, plus .15c per aircraft mile. This means a 200 mile trip might cost about \$32.00.

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Automobile Insurance Rates Up. Payments for the five months of 1957 have been very high, some boosts will come at mid-year, others at mid-summer.

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Recognizing And Evaluating Profit Opportunities* . . .

By F. S. CAPON, C.A.,
Secretary and Treasurer,
Du Pont Co. of Canada (1956) Ltd.,
Montreal, Quebec.

Increased demand, technological improvements, development of new products and of natural resources open the way for business expansion and additional sources of profit. What basic principles govern an intelligent evaluation of such opportunities? How are they analyzed and presented for managerial decision?

MEASURED by any standards, Canada's future is brighter than that of almost any other country in this world. We have vast amounts of proven natural wealth—on a per capita basis probably the world's highest—and we have the skills needed to develop these resources. We have great areas which have scarcely been explored from a resources viewpoint, and these are bound to be rich in materials of all kinds. We have a political stability better than that in most countries, with a system of government most likely to foster the continued healthy growth of Canadian living standards. In any world-wide vote on the "country most likely to succeed" it is difficult to see how Canada could do other than win or show!

While the obvious emphasis may be on natural resources and extractive industries, a situation of rapidly developing wealth, growing population and alert government should automatically bring about profitable expansion throughout all commerce and industry. For any enterprise today, the big question should be "How do we take our part and obtain our share of the fruits of Canada's development over the next twenty-five years?"

How do we pinpoint the profit opportunities open to us? What principles govern their selection and evaluation? How do we analyze specific projects and present them for action by management and by directors? How do we decide the best method of financing such projects? What are the costs and advantage of the alternative methods of finance? What's ahead in the money market?

My part of this very broad and absorbing subject is the recognition and evaluation of profit opportunities. Before delving into more specific comments I would like to make a few very general observations in the nature of background against which my subsequent remarks should be constantly viewed.

1. When you are faced with the necessity of selecting one or more from a number of diverse profit opportunities, you must find a sound yardstick for evaluating all such opportunities on a comparable basis, though the nature of each may differ greatly.

*This address was delivered at the 36th Cost and Management Conference of the Society of Industrial and Cost Accountants, held at Banff, Alberta, June 24-26, 1957.

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2. In the final analysis, the primary aim of the entrepreneur is the rate of profit per dollar of investment over a long period, and the best yardstick for evaluating diverse projects is inevitably net return on gross investment. (This obviously true comment must always be coupled with the equally true statement that long run profits will only come to the company that is fulfilling a useful service or producing a needed product, and doing its job for the community as efficiently as possible.)
3. The measurement of true profit in anything except a single product company requires a sound and objective apportionment of indirect costs and expenses. There are often great pressures to bend the allocations in order to favour a particular product, but such tampering with accounting principles can easily lead management to unsound decisions on profit evaluation.
4. There rests on industrial accountants a very real responsibility for marshalling all the facts which have a bearing on evaluation of a new profit opportunity and for recording them in an honest and objective manner so as to aid managements in reaching sound decisions based on the best available forecasts of markets, revenues, costs, taxes and other pertinent economic or financial trends.

To my mind, these are the vital background considerations for the accounting or financial man concerned with evaluation of profit opportunities—the considerations for the engineer, the research scientist, the sales promotion manager may be quite different, but in the final analysis all must be balanced and weighed against each other at the decision stage.

A Re-check on Existing Products

Any company embarking on a deliberate programme of profit expansion will first take a look at its existing operations to see if the foundation is sound. How do we go about this? In brief, we find the answers to a series of leading questions, such as:

What are the potential markets for our present products, both at home and abroad, bearing in mind the competitive position in the industry, potential competition from new products, Canadian tariffs, foreign tariffs, and any other factors affecting the total demand for the product and the total capacity of the industry to supply?

Is it necessary to expand present plants to maintain our position in the industry?

Are there any steps we can take to improve our share of the market?

Can our capital be employed more profitably in other lines than in any part of our existing business?

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Would consolidation of operation in fewer lines increase the rate of return on operating investment and make funds available for more profitable opportunities elsewhere?

Reasonable answers to these, and similar questions, should precede any planned programme for profit expansion, and should of course be obtained at fairly regular intervals for all existing operations.

Considerations of Business Diversification

Having checked on existing lines, a company proceeds to evaluate the opportunities for branching out into new businesses—in other words, by diversification, to seek that stability and security which seem so desirable to companies whose single-line operations are subject to a strong cyclical fluctuation or whose business is vitally affected by economic swings in one or two basic industries.

Here again, the approach is to seek reasonable answers to a handful of searching questions, such as:

What are the potential markets, both domestic and export, for each new product being considered? What is the range of market based on different price assumptions?

Is this field at present served by a competitive manufacturer in Canada? If so, do we have a particular advantage in know-how, plant location, patents, processes, service, or any other factor which causes us to be confident of taking a sufficient share of the market to make an entry profitable?

Is the market at present supplied from foreign sources? If so, what do we know, or what can we surmise about their future plans for Canadian manufacture? How would we stand if they should decide to come in to protect a vested position?

If the product is new to Canada, what are the low and high estimates of potential markets, conceding the traditionally slow acceptance of new or untried products in Canada?

These, and related questions, must be answered in a general way before planning for entry into new businesses can proceed with any assurance of success. At this stage two factors are absolutely vital—speed and secrecy. Speed, because you must assume that others are covering the same ground, studying the same opportunities, and probably coming to the same conclusions, and in a small market such as that usually available to Canadian secondary manufacturers, the first in the field has a tremendous advantage. Secrecy, for the very reason that others with similar intentions may move suddenly to protect themselves if they hear that a competitor is approaching a decision which may beat them out in a new and profitable opportunity. For this same reason, judgment may sometimes dictate that you announce your plans in order to forestall a competitor working along the same lines.

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Usually, therefore, tentative decisions must be made based on general answers to these questions, in order that detailed planning can proceed with minimum delay. The detailed planning will bring out the accurate or considered answers on which the final decision to proceed must be based.

Common Factors in Most Profitability Studies

From the above it is clear that the more significant factors are common to all profitability studies—whether these be aimed at existing products or products not now manufactured. These common factors may be summed up as:

Market studies and forecasts, and the economic, commercial and operating assumptions on which such forecasts must be based.

Accounting policies, particularly those concerned with measurement of costs, allocation of fixed costs, expenses, etc.

Factors concerning the geographical location of plant, sales offices and administrative offices.

Vital incidental knowledge, such as analysis of tariff structures at home and abroad, technical information, patent positions, raw materials supply, transportation facilities, availability of power and other services, availability of manpower, and all of the other items which together comprise the economics of manufacture.

Since all of these factors are present in studies of new products, with the chief items being common to both new and old products, I will probably cover the ground more completely if I run over the process of evaluating the profit possibilities of undertaking the manufacture of a new product, leaving you to make the necessary adaptations for evaluation of existing lines of business. I realize that you are directly concerned with the measurement of revenue, costs and profit for such studies, rather than the choice of a plant site or the evaluation of one type of equipment as against another. However, many factors not strictly in the realm of accounting or finance must be contained in the final document on which directors must make a decision, and it may well fall to your lot to edit this document or even to put it together from the various separate reports that will be produced by such staffs as research, commercial development, engineering, sales, legal, and real estate. For this reason, I will at least touch on all the important considerations affecting the evaluation of a new profit opportunity in manufacturing, whether or not these may fall within the direct scope of your responsibilities.

The Search for New Opportunities

Before a new manufacturing opportunity can be evaluated, it must first exist as an idea in the mind of someone in the organization, then be developed as a practical idea, and finally as a project worthy of

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serious study. The generation of ideas is to some extent accidental—any member of an organization may conceive one at any hour of the day or night because of a thought process started up in a business or social discussion, while reading, while watching TV, or simply while day-dreaming. The important thing is to be sure that the organization is "idea conscious", and that ideas be passed on to the proper unit for evaluation.

However, no sound organization can rely on this hit-or-miss approach to the generation of new ideas, and any planned growth programme should be supported or initiated by a research and commercial development department. In some large companies this may include a big scientific staff housed in a full scale research laboratory—in smaller companies it may boil down to one or two capable and imaginative individuals whose knowledge of the business and potential diversification opportunities is such that they will probably develop most of the possible ideas from a regular review of all the commercial intelligence available on their particular subjects.

The research and development department is therefore specifically charged with the development of new ideas stemming from a constant review of all current published information which may bear on existing, or possible new businesses, and from such primary research work in untried areas as the company can support. It also acts as a clearing house for ideas from all departments, and undertakes whatever scientific or other studies are necessary to make initial and very general tests of the practicability of new ideas. In many companies a unit of the organization is given this title. In many others this type of work is carried out by officers or units with very different titles. No matter what your form of organization may be, no matter how large or how small, the things you must do in evaluation of profit opportunities are virtually standard.

Experience shows that most new profit opportunities will come from deliberately planned studies in pre-selected areas, rather than from chance ideas that happen to occur to people, and it therefore falls on the research and development people to determine those areas for study which are most likely to prove fruitful. This process is not haphazard—rather it must be based on a careful and objective appraisal of the experience and technical knowledge available, of the abilities of the key personnel in the organization, and other advantages or limitations peculiar to the organization such as financial strength and so forth. The selection of areas for concentrated study is vital because this selection will probably determine the future course of the Company.

Preliminary Evaluation of a New Product

Naturally, few ideas pass muster when subjected to a detailed and objective examination. Some would not integrate with present opera-

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tions, or would be outside the areas bounded by the company's special skills, technical knowledge, or financial resources. Some would be unprofitable because of obvious lack of markets or sufficient volume of output. Thus a preliminary screening of ideas must take place.

Once this screening has shown a potential new product to be worthy of special interest, a concentrated effort must be made to proceed as fast as possible with the evaluation on which to base a final decision for or against manufacture. In our company, this concentrated effort is done by teams which may be composed of development personnel or which may include personnel on loan from other operating or auxiliary departments, depending on the particular aspects which must be studied in each project. Our policy on this matter is simple—it is of primary importance that we take advantage of profitable opportunities as they arise, therefore we must put onto the study of such opportunities the best possible men wherever they may be located in the company.

The development group must establish quickly the patent position on the new product—is it covered by existing patents? Who holds patents? Are they available for license? If not covered by patents, is it patentable? At the same time, they must establish the availability of technical knowledge required to manufacture the product. Is any process or operating knowhow essential? Is it available? Also at this stage the feasibility of manufacture should be tested in such ways as pilot plant or laboratory scale manufacture (if the product happens to be susceptible to manufacture in experimental quantities), test runs in the plant if it is of a nature that can be produced experimentally with existing equipment, or possibly even produced experimentally by one of the service organizations set up for this purpose.

Co-incident with the technical and production analysis is the commercial evaluation of the product—carried out by personnel with special abilities in market analysis, economics, and engineering—and also at least a preliminary financial study. This activity covers:

- (a) Market analysis.
- (b) Engineering studies leading to decisions on size and location of plant.
- (c) Financial study to determine return on investment and availability of capital.

Market Analysis

Before measuring the potential market, the proven and possible new uses for the product must be agreed on within reasonable limits. Estimates of possible new outlets or uses may be "out in the blue", but any reasoned guess is better than no opinion at all, and the reasoned guesses on possible demand for the product will necessarily be an important factor in the ultimate report on evaluation.

Next comes the market analysis, or the measurement in specific terms of probable sales for existing or foreseeable uses of the product.

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A number of facts are significant in measuring markets, and I can best illustrate them by listing some of the questions that must be answered by the market study experts:

What is the competitive situation—from other Canadian manufacturers?—from foreign manufacturers?

Where are potential customers located?

What share of the market can the company obtain?

Are there large seasonal variations in demand?

What effect would price changes have on demand? What are probable future price trends?

What is the tariff situation into Canada and into other countries which are logical export markets?

Is the market stable or subject to product obsolescence?

What are the possibilities of major technological changes?

What is the effect of freight and other distribution costs from plant site to customer?

What effect will probable future economic trends have on major customers or consuming industries?

These, and many similar questions must be answered before the development team can decide on a forecast of probable volume of sales under the conditions most likely to occur.

Engineering Study

The engineering study concerned with the choice of plant site and design of plant buildings and equipment can be proceeding in the meantime to whatever extent is possible pending a forecast of plant capacity needed to supply demand. Once this forecast comes from the market study group, the engineers must refine their preliminary design work and produce the first estimate of construction and site costs. Here again a number of questions must be answered:

What alternative processes must be considered before deciding on the optimum for this company?

Where should the plant be built, having regard to such factors as availability of raw materials, power and other services, labour supply, proximity to markets, transportation facilities?

Should raw or intermediate materials be purchased or manufactured?

How can cost per annual pound of production be minimized?

What will production costs be?

What provision should be made now for expansion?

It is in this stage of the evaluation of a new product, or of the future of an existing product, that an intimate knowledge of Canada, its strengths and its weaknesses, its temperament and its resources, can make the difference between success and failure. Vast distances and a relatively small domestic market are overriding considerations. The

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population is dispersed along the 4,000 mile southern boundary, and most secondary manufacturing will probably be located as close as possible to the population centres which comprise the backbone of the market. A plant may, however, be logical in the wilderness if it is making a product needed by our mining or other resource industries operating in those territories. Usually in Canada raw materials and the markets for finished products are separated by great distances, and the economics of moving either raw materials or finished products will be a vital factor in deciding plant location.

Once a geographical area has been selected for a plant site, land acquisition becomes a problem. Often a site must be placed under option before the project can be properly evaluated. Such activities must be conducted in strictest secrecy, usually through third parties, if site costs are to be kept to a minimum. Such diverse factors as municipal zoning regulations; availability of power, water, transportation, and other services; disposal of effluent; community relations; labour conditions in neighboring industries; must all be weighed. All of these are items having an important bearing on the capital cost of the plant or the subsequent cost of operation.

The design of plant buildings, process machinery and equipment must be left to the engineers, who will require a considerable degree of latitude in arriving at their estimates of construction costs. Often a fixed price contract would prove expensive, and if the job is to be let on a "cost plus fee" or "cost plus fixed fee" basis, reasonable allowances must be made for field administration, engineering design costs, and contingencies. Unless an exorbitant amount of time and money is to be spent at the design stage, decisions must be based on construction cost estimates accurate only within certain limits, and allowance must be made for contingencies in order to arrive at a final construction cost estimate. If this allowance is too high, it may well kill the project as being unattractive; if the allowance is too low, it may lead to an unsound decision to proceed.

The Financial or Accounting Study

Once provisional decisions have been made on plant location and size, the accounting staffs can start work with the engineers on estimates of production costs. When costing existing operations, the accountant is concerned with an accurate presentation of actual costs and possibly with a study to see how costs can be reduced and profits increased. When determining operating costs for a proposed plant, however, he is compiling data which will affect the investment of capital not yet committed. In other words, the impact of his work in the latter case is much, much greater than in the former.

From the market analysis group, an estimate of sales value and volume by years will have been received. The engineering group will

RECOGNIZING AND EVALUATING PROFIT OPPORTUNITIES

have provided an estimate of the capital needed to build the plant. The cost accountants, working with the engineers, will have estimated the costs of operating the plant, and, based on all of this information, they can also produce an estimate of the investment needed in inventories and other working capital. Thus we have all of the factors needed to solve the return on investment equation, which is the key to the decision for or against proceeding with the project.

Final Decision

The final decision on any important project is invariably taken by the Board of Directors, since it involves the commitment of large sums of shareholders' money on a basis which cannot readily be reversed. Directors are necessarily remote from day-to-day considerations of the business, and they must make their decisions by applying broad wisdom and judgment to the facts as developed for them by management. Obviously the presentation to directors is critical—it must contain all significant pertinent facts, it must be objective or unbiased, it must contain a reasoned recommendation, and it must avoid masses of detail and background information which is not vital for decision making and which tends to confuse rather than help those who do not attempt to keep abreast of the myriad problems within the sphere of management.

Because the vital sections of the final recommendation document are necessarily given over to return on investment, availability of capital, and other figure data, responsibility for the preparation of this document is often delegated to the financial and accounting staffs. Theirs is the task of collecting all of the pertinent information, of sifting and collating, of challenging if necessary the reasonableness and accuracy, and finally of putting the whole mass together into a single concise, coherent story which will lead an intelligent reader through a logical presentation to a sound conclusion. This is a problem of communication—the decision is not “sold” to directors; it should be reached as the only decision that could logically result from the demonstrated facts or the recorded assumptions. If this final document fails in its task, all the work of the research and development staffs, market analysts, economists, engineers, lawyers, accountants and others concerned in the various studies has gone for nothing.

Fundamentally, the directors' primary responsibility is to ensure that management earns a return on shareholders' investment commensurate with the risk involved in the business. The greater the risk, the higher the return needed to justify taking the risk. Because entry into virtually all new enterprises involves risks to a greater or lesser degree, forecast return on new investment is the dominant or determining factor in the final decision. A statement of anticipated return on investment is not sufficient in itself, however. It must be backed up with other significant information which would be helpful to the directors in assessing basic assumptions and which would give important support to

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the recommendation of management. No blueprint can be laid down for a document of this type to suit all projects in all companies, but there are common sense guide rules that usually apply.

The first is to know your directors, and particularly their primary personal interests, as this will bear importantly on their approaches to the proposal. The second is to know the degree of information they expect for purposes of reaching a decision—too little may arouse suspicion or a feeling that you are trying to “put one over”; too much will be confusing and may cause them to feel you are covering something up or are trying to get them to accept management responsibilities. Third, go to the trouble of giving them a well conceived document sufficiently ahead of the meeting so that they can have an opportunity to do some basic thinking and participate intelligently in discussions. Directors are only human—some of us are classified among that mystical body—and the old rule of treating them as you would expect your own staff to treat you is still pretty sound.

Now, what goes into the final recommendation document? Each such report must be tailored to the specific project, but again there are broad rules that apply more or less to all. Usually, there are only a few salient factors that will be weighed against each other at the decision making stage, and the report should be designed around these—possibly even be limited strictly to them. These salient factors are:

- Market forecast in general terms, and the fundamental assumptions on which it is based.

- Financial forecast, summary of revenues, operating costs, expenses, financial charges and net income, and return on investment.

- New capital investment summary, showing both fixed and working capital.

- Plant location considerations (often surprisingly important if directors come from widely scattered areas).

- Incidental information such as patent situations, if these are sufficiently important to have a bearing on the final decision.

- Availability of capital and recommendation.

For the most part these various sections of the final document are comprised chiefly of figure schedules or rely on figures for extensive illustration. The narrative sections should be a concise relation of facts, with the minimum of supplementary commentary, most of which is usually interpreted as leading the reader by the nose! I will run over each briefly.

The fundamental assumptions on which a market forecast will be based are future overall economic trends, a summary of sales broken down by consumer groups, size of the total market for the product and the degree of market penetration expected, summary of competitive position, forecast of selling price trends, possibility of product obso-

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lescence, extent to which market may be varied by varying size of plants, selling prices, or both. These are the key to the reasonableness of the market forecast—directors do not need to be told why you made the assumptions you did unless they ask, but they are entitled to know what the assumptions were and to use their own broad business judgments in deciding their validity.

There is no need for me to expand on the financial forecast summary. This is strictly a figure schedule, showing the financial results that will flow if the market assumptions and engineering estimates are accurate. The financial schedule should, however, disclose any important assumptions not shown elsewhere, such as raw material price trends, any special situations on raw material supplies, labour rate trends, depreciation rates, and so forth. Again, these are assumptions which have a significant effect on the profit position and are all matters on which directors may bring their broad judgments to bear.

The new capital investment summary is also primarily a financial schedule, to show the money needed for site costs, plant construction costs, and working capital. Directors do not want to look at detailed engineering cost estimates by building or by piece of equipment, but they do want to know the margin of accuracy of the estimate (as, say, plus or minus 10% or 20%), the extent to which contracts are at fixed prices, allowances for contingencies, and so forth. On working capital items they may want to know the number of months' supply of materials in inventories.

Plant location considerations are important because the placing of a plant at an advantageous location opposite markets, opposite competitors, or opposite raw material supplies is so often a factor of sufficient importance in costs to make the difference between an attractive and unattractive project. For example, expansion at an existing company site is almost always more economical on the surface, because use can be made of existing facilities, you avoid the major cost of developing a new site, and subsequent organization demands will be less. In Canada, the greatest headache of secondary industry is in justifying sufficiently large plants to take advantage of mass production techniques employed by foreign competitors. By expanding an existing plant, important operating economies may be possible. Against this, however, location opposite customers and competitors may be a dominant factor. Markets move, and customer service is often vital. A plant built years ago may now be far away from many of its customers, and a closer competitor may be gaining an advantage. These are all factors of sufficient importance to influence final decisions, and should be summarized for directors.

I left one section for incidental information because I find that the preliminary evaluation studies such as the detailed market analysis, the engineering study, the research study or pilot plant operation, usually

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develop certain important facts which do not fit logically into the other clearly defined sections but which may well be of significance in the final evaluation of a project.

Finally comes the summary of availability of capital and recommendation. Availability of capital is significant in the evaluation of a project to the extent that new capital must be raised, or capital used which will thus be no longer available for other foreseeable projects. The return on investment must be enough to cover the interest and amortization costs of borrowed money as well as a margin equivalent to the insurance against the risk which falls on shareholders rather than on suppliers of debt capital.

Decision to Proceed

The decision to proceed with a new project stems logically from the evaluation compiled by management. From the above document, directors can, by exercise of personal judgment, assess this evaluation, reach a conclusion on its validity within reasonable limits, and decide whether the financial returns justify the commitment of shareholders' capital. I have tried to show that the evaluation is simply a collection of the pertinent economic, scientific, commercial, engineering and financial facts, summarized in terms of a common denominator—dollars—adjusted to conform to an agreed set of assumptions estimated as being most likely to be valid under the conditions foreseen, and finally expressed in a form comprehensible by wise and prudent individuals whose business judgment is more important than a possible lack of knowledge of the day-to-day problems of management. Once the decision has been reached, speed is essential in carrying out the recommendation, as secrecy is usually gone, competitors may be in a position to move quickly, plant site costs still unfirm will rise, and other similar adverse events may occur.

Other Possible Avenues for Improving Earnings Position

So far I have discussed profit opportunities in terms of new products or new businesses. However, I would not be doing justice to the subject if I did not at least refer to some other types of profit opportunities with which each of you is bound to be concerned in the years ahead.

There must be a constant review of existing business, to decide whether plants should be expanded to meet growing demand, whether profitability of the business would be greater if competitors were left to supply increased demand, or whether capital can be better employed elsewhere thus making it desirable to dispose of existing facilities. Most of the evaluation factors are the same as for a new product, except that the scientific research and engineering studies are usually much simpler or non-existent, and market, cost and profit estimates are usually much more accurate. Markets must be estimated, economic conditions fore-

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cast, competitive positions analyzed, price trends studied, product obsolescence risks weighed, and plant site locations considered if there is a possibility of expansion at a new location. The evaluation by management and any subsequent presentation to directors thus takes a form substantially similar to that for a new product or business.

When considering the elimination of existing operations, it is important to recognize objectively the extent to which operating costs in other units will be affected by changed situations in the allocation of indirect costs, administrative expenses and similar items. There is an amazing degree of inertia in most organizations on these types of cost and expense, and an objective assessment of the resistance to cutting "fixed expenses" is necessary for an honest evaluation of the financial effects to result from disposing of any operating unit. Personal loyalties to fellow employees are strong, and are often allowed to dominate decisions in this area. Companies do lose something when they act cold-bloodedly in disposing of units—it may be goodwill, or there may be a drop in internal morale, or adverse public reactions may militate against the company particularly opposite customers or potential new employees. These intangible factors form part of the evaluation of existing businesses, and while you may not be able to reduce them to dollars you should not disregard them in arriving at a recommendation. An organization which is successful over a long period is invariably a good citizen—opposite government, customers, suppliers and employees.

If a decision to close down an operation or dispose of it is obviously sound, this fact can and should be explained to employees, to customers or to government, each of which is composed mainly of rational human beings capable of understanding facts. I'm not saying that you must bare all your secrets to the world, but valuable goodwill will certainly be lost if you don't take the trouble to give others information to which they are reasonably entitled in relation to their interests in the business so that they too can appreciate that the recommended action is sound and fair.

Another constant area for searching out profit opportunities is the improvement of efficiency throughout the organization combined with sound organization planning to ensure that duplication of effort is eliminated, and that auxiliary (or non-line) functions are restricted to those that are clearly necessary or justified. There is no need for me to go into the evaluation of such profit opportunities—this is solely a question of satisfying yourselves that all costs and expenses return, in the form of goods or services, their value plus some return.

Conclusion

Thus, I sum up the main opportunities for increasing profits under four headings:

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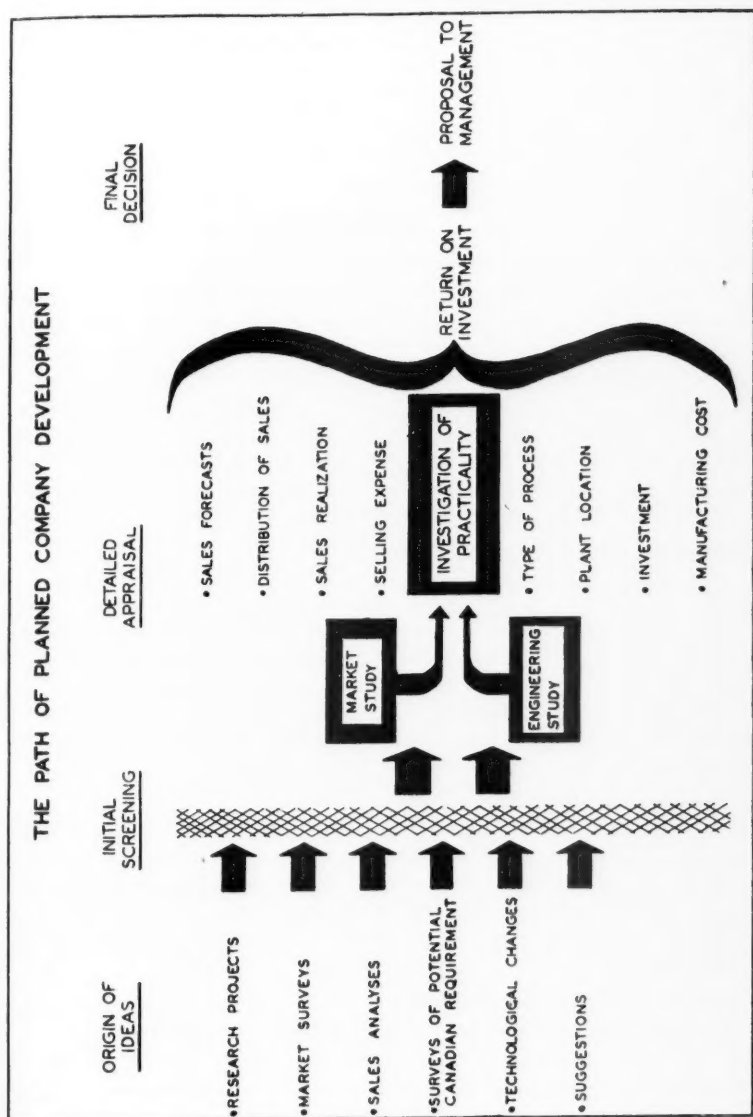
- (a) Expanding profitable operations if markets are growing.
- (b) Entering new fields where profitable markets exist or can be developed and the necessary skills or knowledge are available.
- (c) Eliminating operations which are no longer profitable.
- (d) Constantly reviewing main cost and expense centres to minimize extravagance and waste.

All four avenues are constantly open to all Canadian companies. The national wealth that must be realized as we tap our resources and expand our population and markets will provide profit opportunities in far greater abundance than at any time in our history. At the same time, introspective studies leading towards elimination of unprofitable or obsolete businesses and reduction of unnecessary expense or extravagance are a constant challenge to each and everyone of us, for the company which maintains complacently that it has achieved full efficiency has also achieved a corporate state of mind that can lead only to stagnation!

In the constant search for, and evaluation of, new profit opportunities, we in the accounting and financial end have a role which is sometimes difficult and often unpopular. When we are reducing facts, forecasts and guesses to figures we must be absolutely objective and rigidly honest in assessing the validity of information. We must recognize that enthusiasm for new possibilities is an essential part of the make-up of the research scientist or development specialist, but we must see to it that we are not carried along on a possible rosy surge of optimism. It is proper that much of the direct contribution by an accountant may well be in the constant questioning and challenging of information and assumptions which underlie the apparent financial facts of new projects, and this very contribution is often looked upon as throwing cold water or dampening enthusiasms. Hence, we earn the reputations for being cold-blooded, unimaginative and penny-pinching. That, however, is our role!

Nevertheless, we must avoid going to excess. Too much cold water would drown initiative, and your own reputation and standing, and therefore your value, will suffer if your judgment is unbalanced towards the cold-blooded or penny-pinching approach. Your job is to deduce from masses of information (coloured or honest) the facts or valid assumptions which are pertinent to a sound evaluation of any proposal and to present them objectively in such a manner as to lead towards the proper decision. The accounting and financial staffs have a vital part to play in the evaluation of new profit opportunities, and they will serve their companies poorly if they allow themselves either to be swept away by waves of wishful thinking or alternatively to be stubbornly unreceptive to valid new, if unorthodox, ideas.

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Measurement of Return on Capital Employed* . . .

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In making a choice between alternative capital proposals, management must have a sound basis for measuring the profitability of each. The author will examine the factors that must be considered in measuring the return on individual capital projects.

1. BACKGROUND

Importance of Good Capital Management

CAPITAL management is a major and largely undelegatable responsibility of top management. For many large companies, in an expanding economy such as that of Canada, it is probably the most important single function of the President and the Board of Directors.

Decisions on the administration of a company's capital programme are so complex that top management can not live up to its opportunities and responsibilities in this field without technical help in financial and economic analysis. This analysis can not substitute for judgment, but it can enlighten and improve judgment.

Framework for the Company's Future

A company's future growth and earning power is determined in large part by the skill and wisdom with which its high command manages the rationing and the acquisition of capital. Capital expenditures embody the results of research and technological progress and provide the framework for the company's future growth and profitability. Capital sourcing, i.e., finding the funds for these capital expenditures determines the capital structure and thus the company's cost-of-capital and its bankruptcy safety margins.

Effect on Canadian Economy

Corporate capital management decisions will therefore in the aggregate have a profound effect upon the future growth and stability of the Canadian economy. Moreover, linking capital expenditures more accurately to cost-of-capital will make more effective the efforts of monetary authorities to control investment outlays by manipulating capital costs.

Dimensions of Capital Management

At the top level capital management has two main parts:

A. *Capital sourcing*, i.e. determining where to get the capital. This means deciding on the right combination of retained earnings, equity financing, leaseback financing, long and short term debt, and

*An address delivered at the 36th Cost and Management Conference of the Society of Industrial and Cost Accountants of Canada, held at Banff, Alberta, June 24 - 26, 1957.

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asset disposals. These decisions should be based on the comparative costs and risks of different sources of capital.

B. *Capital rationing*, i.e. deciding where the money goes. The allocation of capital funds among rival investment projects should be based on the prospective profitability and risks of alternative capital proposals.

This paper deals with capital sourcing only incidentally and concentrates on the aspect of capital rationing, namely, measurement of return on capital employed. To see its position in the big picture we shall first sketch four main phases of rationing:

1. Foresight.
2. Measurement of economic worth of capital proposals.
3. Screening and selection.
4. Follow through.

1. Foresight

Concrete and quantitative foresight is both a hallmark and an essential ingredient in good capital management. Foresight has two main dimensions:

- a. Long range projections of the firm's supply of and demand for capital.
- b. Short range, usually one year capital budgets and cash budgets.

Five year forecasts of a company's capital needs and capital requirements are now common in modern management. Based on projections of future economic conditions and industrial growth prospects, some companies have prepared detailed plant and equipment targets toward which their entire capital expenditure programme is oriented. Other companies reject explicit long range capital plans as fanciful and have been content to draw their future facilities plans in broad brush strokes leaving the details to be worked out and adapted through the mechanism of the short range capital budget. Industries and companies differ in the degree of realism with which they can make explicit long range capital investment projections.

In planning for the acquisition of future capital funds, the long term projections of probable capital outlays can be stacked against expected internal cash generation (cash receipts minus cash outlays) to forecast capital to be raised outside by borrowing, by leasing, or by equity flotations.

Short term budgets of capital outlays and working capital sources are essential even though plans have wide margins of uncertainty, particularly toward the end of the budget period. Budgets force early submission of capital proposals. They thereby permit top management to screen and balance them provisionally and to help management weigh the desirability of outside financing or the need for cutbacks.

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2. Measurement of Project Worth

Measurement of the economic worth of capital proposals has two dimensions:

- a. Yardsticks of investment worth and
- b. Application of yardsticks by project analysis.

Both will be discussed later.

3. Screening and Selection

Screening of capital proposals is the essence of capital rationing. With proper allowance for special risks and for imponderables the standard of minimum acceptable profitability should be the company's market cost-of-capital or its opportunity cost-of-capital, whichever is higher.

Market cost-of-capital is what the company will probably pay for funds on the average over the future. For a large publicly held company this can be measured with adequate precision for rationing purposes. This is a conclusion reached after a decade of wrestling with troublesome, conceptual and metrical problems of costing capital. Despite the margin of error in measuring a company's capital costs, I have found no better cut off criterion.

Opportunity cost-of-capital is the sacrificed profit yield from alternative investments. Only when a company refuses to go to market for funds as a matter of policy can the opportunity costs stay long above market cost-of-capital.

Making correct allowance for risks and unmeasurables is where top management's judgment plays its most important role in project screening. Investments which alter the nature of the company's risk exposure alter also its ability and hence its costs of attracting capital. The general principle of rate-of-return rationing, nevertheless, still applies. Even when measuring project profitability and riskiness is incomplete and subject to error, it provides a basis for improving executive judgment rather than attempting to displace it. Judgment is an essential ingredient in all capital rationing decisions but judgment is enlightened and improved when the company's cost-of-capital is explicitly quantified and when the profitability of projects is measured as fully as is economic.

4. Follow Through

Capital controls to assure that the principles of capital rationing are actually carried out are of many sorts, including: (a) outlay controls, i.e. making sure that the expenditures are in the amount and form authorized; (b) post mortems, i.e. auditing the project earnings at early stages to keep the estimates honest and to learn from mistakes, and (c) spending logs, i.e. comparing actual outlays with budgeted forecast outlays.

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Role of Return on Capital

The rate-of-return on capital employed should play a dominant role in each of these aspects of capital management. Foresight is the process of forecasting outlays and sources and these are improved by the follow through mechanism, but, of course, it is all a meaningless exercise unless disciplined by explicit measures of project profitability and cost-of-capital. Measurement of project worth should center on rate-of-return. The rate-of-return required by inside and/or outside sources of funds should be the standard of project selection.

II. YARDSTICKS OF INVESTMENT WORTH

Up to this point we have noted the importance of good capital management, sketched its major dimensions and seen the central role which return on capital should play. We are now ready to plunge into the main subject, namely, measurement of return on capital employed. In this section we shall examine yardsticks of investment worth. In the next section we shall look at some of the problems of applying the yardsticks to capital proposals.

Requirements of a Good Yardstick

In choosing among alternative yardsticks of investment worth, it is helpful to think first of the requirements of a good yardstick, namely:

1. *Accuracy*: Measures productivity of capital correctly.
2. *Inclusiveness*: Summarizes project merits in a single figure.
3. *Realism*: Looks only at what happens to what is important—cash.
4. *Versatility*: Makes different types of projects comparable.
5. *Parimutuality*: Reflects correctly the betting odds on getting the estimated earnings.
6. *Simplicity*: Makes calculation easy.
7. *Screenability*: Lines up with objective screening standards.

Candidate Yardsticks

The chief candidate yardsticks are these:

1. Necessity-postponability.
2. Payback period.
3. Level book rate-of-return.
4. Discounted cash flow rate-of-return.

Necessity-Postponability Yardstick

The yardstick of necessity or postponability measures the financial worth of capital projects and ranks them on the basis of someone's opinion as to their urgency or essentiality. Though widely used, and enthusiastically supported by some, this yardstick meets none of the requirements of a good yardstick.

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Degree of urgency does not measure the productivity of capital, that is, the effect it will have on the company's earnings. Urgency is not a measurable quantity. Top management can be panicked into projects in an atmosphere of haste with full scope allowed for the arts of persuasion and exhortation. Projects which are urgent can be duds and projects which are highly postponable can be highly profitable.

The acid test of a "must investment" should be its economic desirability. Some projects labeled as "necessary" have such high and clear profitability that explicit measurement is unnecessary. It is nevertheless the profitability of the project, not its urgency or its label or the importance of the person who sponsors it, that should control the decision.

Payback Period Yardstick

The payback period yardstick is the number of years required for the earnings on the project to pay back the original outlay with no allowance for capital wastage. It is probably the most widely used measure of investment worth.

Payback has some virtues. It can serve as a coarse screen to pick out high-profit projects that are so clearly desirable as to require no refined rate-of-return estimates and to reject quickly those projects which show such poor promise that they do not merit thorough economic analysis. In addition, it may be adequate as a measure of investment worth for companies with a high outside cost-of-capital and severely limited internal cash-generating ability in comparison with the volume of highly profitable internal investment opportunities. If a shortage of funds forces the company to accept only proposals which promise a payback period after taxes of two years or less, the use of a more refined measure might not affect the list of accepted projects.

It also can be useful for appraising risky investments where the rate of capital wastage is particularly hard to predict. Since payback weights near-year earnings heavily and distant earnings not at all, it contains a sort of built-in hedge against the possibility of a short economic life.

For most corporations, however, payback is an inadequate measure of investment worth. It is a cash concept, designed to answer the single question of how soon the cash outlay can be returned to the company's treasury. As such it fails in three important respects to provide a satisfactory yardstick for appraising all the profit-producing investments of a firm:

1. Payback tends to overweight the importance of liquidity as a goal of the capital-expenditure programme. No firm can ignore needed liquidity. But most can achieve it by means that are more direct and less costly than sacrificing profits by allowing payback to govern the selection of capital projects.

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2. It ignores capital wastage. By confining analysis to the project's gross earnings (before depreciation) it takes no cognizance of its probable economic life.
3. It fails to consider the earnings of a project after the initial outlay has been paid back. By concentrating on liquidity, it ignores the vital matter of what the life pattern of the earnings will be. Up to the end of the payback period the company has just got its bait back. How much longer the earnings will last is what determines the profitability of the investment. A three-year payback project may yield a 30% return on average investment if it has a long life, but only 12% if its life is four years, and no return at all if just three years.

On balance then, payback period does not stack up with the requirements of a good yardstick:

1. It is not accurate: it does not measure the true productivity of capital.
2. It is not inclusive: it foregoes the future by ignoring the duration of the earnings stream.
3. It is imperfectly realistic: though confined to cash, it ignores taxes and ignores lifetime earnings.
4. It is not versatile: comparisons of projects which have rising earnings with those of declining earnings is extremely misleading.
5. It cannot reflect betting odds: it permits no allowance for differences in the chances of getting a particular year's income or savings.
6. It passes the simplicity test with flying colours.
7. It fails its screening test: though a minimum pay out period can be specified by ukase, it cannot be backed up logically or objectively.

Level Book Rate-of-Return Yardstick

Some type of rate-of-return yardstick is distinctly superior to payback in that it takes explicit account of capital wastage, i.e. the gradual loss of economic value over a period of time. It thus measures capital productivity by earnings over the whole life of the investment and permits rate-of-return rationing which will direct the flow of funds to their most profitable use by comparison with a relevant standard of acceptable profitability, namely, cost-of-capital.

Two types of rate-of-return can be distinguished:

1. Level book.
2. Discounted cash-flow.

The level book rate-of-return has the disturbing characteristic of having a host of variants. These depend upon how earnings are defined and how investment is measured. To use this yardstick meaningfully a

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number of questions must be answered in a rigorously uniform method throughout the company. Some of these questions are:

1. Should the investment include expensed outlay?
2. Should the investment be deflated for taxes?
3. Is the investment the beginning amount or the average amount of capital tied up?
4. Should earnings be gross or net of depreciation?
5. Should earnings be before or after income taxes?

Unless these questions are answered in a rigorously uniform manner throughout the organization for all projects, the level book method does not produce rates of return that are comparable among projects. If the answers are not uniform a wide scatter of rates of return for the same project is obtained by the level book method.

Although this book return yardstick scores higher than does either postponability or payback period, it does not do brilliantly in meeting the requirements of a good yardstick:

1. In *accuracy* it is only fair.
2. In *inclusiveness* it is deficient in not taking account of the time shape of either earnings or investments.
3. In *realism* it fails by not being confined to cash and not adequately reflecting taxes.
4. In *versatility* it comes off badly.
5. It can not reflect *betting odds* easily because it does not deal separately with each year.
6. In *simplicity* it is triumphant, provided that ukases on interpretation are comprehensive and are obeyed.
7. In *screenability* it is quite acceptable, though not quite perfect.

Discounted Cash Flow Rate-of-Return

The discounted cash flow method gives a new approach to measuring the productivity of capital and measuring the cost of capital. In the last ten years I have seen its use in industrial capital budgeting grow rapidly. But it is the application that is new, not the principle. Discounting has long been used in the financial community where accuracy and realism are indispensable.

The essential contributions of the discounted cash flow method to top management thinking are these:

1. An explicit recognition that time has economic values; hence that near money is more valuable than distant money.
2. A recognition that cash flows are what matter; hence capitalization policy and the resulting book costs are irrelevant for capital decisions except as they affect taxes.
3. A recognition that income taxes have such an important effect upon cash flows that they must be explicitly figured into project worth.

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Mechanics of Method

The discounted cash flow method has two computational variants:

The first is a rate-of-return computation which consists essentially of finding the interest rate that discounts gross future earnings of a project down to a present value equal to the project cost. This interest rate is the rate-of-return on that investment.

The second is a present-value computation which discounts gross future earnings of all projects at the same rate of interest. This rate of interest is the company's minimum acceptable rate-of-return. This should, I think, be based upon the company's cost of capital. Risk should be reflected either (a) by deflating project earnings or (b) by adjusting the cut-off rate for projects of different categories of risk. The resulting present value is then compared with the project cost. If the present value exceeds it the project is acceptable. If it falls below it is rejected. In addition, projects can, by this variant, be ranked by various kinds of profitability indexes which reflect the amount or ratio of excess of present value over project cost.

Both variants of the discounted-cash-flow approach require a timetable of after-tax cash flows of investment and of gross earnings which cover the entire economic life of the project. In practice the timetable can be simplified by grouping years in blocks. For projects for which investment is substantially instantaneous and gross earnings are level, simple computational charts and tables can be used to estimate the discounted-cash-flow rate-of-return directly from estimated economic life and after-tax payback. For projects with rising or declining earnings streams this conversion is more complex.

Limitations of Discounted Cash Flow

Both variants of the discounted cash flow approach have certain limitations. Because the approach is new in this application, its use requires persuasion and education. Moreover, it initially appears to be complex. But this appearance is deceptive; once the basic method is understood it is actually simpler and quicker to use than the level book method. Another deterrent to its use is the fact that it does not correspond precisely to accounting concepts about recording of costs and revenues. Consequently, special analysis is needed or "postmortem" audits of earnings on past investments.

Superiorities of Cash Flow

The superiorities of the discounted-cash-flow are impressive. It is immune to the distortions of capitalization policy. How much of the investment outlay is capitalized and how much is expensed differs from company to company and from project to project within the company. The true economic merit of a project stays the same. A discounted-cash-flow method reveals this, the level book method hides it.

Divergent time patterns of earnings are correctly assessed by the

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discounted cash flow and not by level book. The time shape of earnings differs greatly among projects. The economic significance of this disparity is underscored by the debates on the time pattern of capital wastage that surrounded the new tax law depreciation. The financial merit of a project depends importantly on the time shape of earnings. The cash flow method recognizes it; the level book method treats all outlays as though they were instantaneous thereby producing error which can be quite important. The same principle applies to measuring the effect of end of life salvage value which is so distant that at the high earnings rates of industrial projects does not mean much. The level book method says this distant salvage value dollar has the same economic value as near dollars whereas the discounted cash flow correctly reflects economic value of time.

Another superiority of our method is that it is capable of reflecting the probability of getting the earnings of any particular type or of any particular year. This probability quite often differs in a way that can be roughly predicted. Allowance for different probabilities can be reflected in the cash flow time table. Though this refinement may be used in only a few projects, it is probably important in these.

Summary

The discounted-cash-flow approach in both its variants has characteristics capable of producing a more realistic and correct measurement of the return on capital employed than do rival yardsticks. In terms of the requirements of a good yardstick, it makes almost a perfect score:

1. *Accuracy*: It measures the relevant concept of capital productivity with precision. It is not distorted by capitalization policy. It reflects only the effects of amortization policy upon income taxes and hence upon after-tax cash flows. It is correctly sensitive to the trend of earnings and to the timing of investment outlays, and gives economically appropriate weight to ultimate salvage value.
2. *Inclusiveness*: It summarizes the merits of a project comprehensively in a single figure since it encompasses the projects whole lifetime of expected earnings and investment outlays measured relevantly and properly weighted for their timing.
3. *Realism*: It realistically confines the analysis to after-tax cash flows undistorted by inapplicable conventions of accountancy.
4. *Versatility*: It produces a measure of investment return which is precisely comparable among projects, regardless of the character and time shape of their receipts and of their investment outlays.
5. *Parimutuality*: It is capable of reflecting the betting odds of actually getting project receipts of different types and in different years.
6. *Simplicity*: It is amazingly simple in spite of its apparent

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complexity. Once grasped, the method requires fewer rules to be mastered and uniformly interpreted. Moreover, the computation can be delegated to cheaper help because it does not require the use of trained accountants. Finally, computational graphs and tables can produce speed and economy in the calculations.

7. *Screenability*: It is conceptually compatible and therefore precisely comparable with a correctly determined company cost of capital. Hence it lines up with screening standards which can be logically and objectively justified.

III. APPLYING YARDSTICK TO CAPITAL PROPOSALS

In Section I we outlined a comprehensive programme of capital management. This showed us the important role of measurement of return on capital employed and enabled us to see how the problem discussed in this paper fits into the big picture. In Section II we examined alternative yardsticks of investment worth, compared them and appraised their deficiencies and superiorities against the requirements of a good yardstick. We now turn to the problem of applying the yardstick to capital proposals. Two aspects of application will be discussed separately: (1) the economic dimensions of the project that need to be measured and (2) the concepts of measurement to be applied to these dimensions.

Economic Dimensions to be Measured

The investment worth of a capital project requires measurement and appraisal of at least four economic dimensions:

1. The amount and timing of added investment.
2. The amount and timing of the added stream of earnings (net cash receipts).
3. The economic life, i.e. the duration of the earnings stream.
4. The risks and uncertainties and the imponderable benefits associated with the project.

The first three can generally be quantified with fair margins that are tolerable for decision purposes. The fourth requires a high order of judgment.

1. Added Investment

The appropriate investment base for calculating rate of return is the added outlay which will be occasioned by the adoption of a project as opposed to rejecting it; or adopting an alternative which requires less investment. For example, repairs which would be made whether or not the proposal is adopted should be excluded from the investment amount because they are not caused by it. The investment should include the entire amount of the original added outlay regardless of how it is treated in the books. Expensing certain items rather than capitalizing them may produce tax savings which should be reflected in estimat-

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ing the investment. Any additional investment in working capital or other auxiliary facilities should be included in the investment amount as should future research and promotional expenses caused by the proposal. Facilities transferred from other parts of the company should be included in the investment amount.

For the purpose of calculating prospective return, the items included in the investment amount should be valued at their economic rather than their accounting values. For cash outlays at the time of the investment decision, these are identical. For existing facilities, however, there can be a pronounced disparity. It is the present value of the earnings opportunities of such transferred facilities that is pertinent; and this is likely to differ from their book value. If the value of the foregone opportunity of continuing to use the facilities in the next best alternative way is lower than their disposal value, then it is their disposal value which should be used.

The timing of these added investments has an important effect upon the rate of return and should therefore be reflected in the rate of return computation.

2. Added Earnings

The productivity of the capital tied up is determined by the increase in earnings or savings, i.e. net cash receipts, caused by making the investment as opposed to not making it. These earnings should be measured in terms of their after-tax cash or cash equivalent. Only costs and revenues that will be different as a result of the adoption of the proposal should be included. The concept of earnings should be broad enough to encompass intangible and often unquantifiable benefits. When these have to be omitted from the formal earnings estimates they should be noted for subsequent appraisal of the project.

3. Economic Life

Economic life of a project refers to the duration of the stream of benefits. Its length may be determined by physical deterioration, by obsolescence, or by drying up of the source of earnings. Estimation of economic life is often the most difficult dimension of project value to quantify. But the problem cannot be ducked. Some estimate is better than none and the depreciable life forecasted for bookkeeping purposes ought to be the best available forecast of economic life. For tax purposes this is not likely because estimates are made for a purpose different from making a capital expenditure decision, namely to minimize taxes.

4. Risks and Imponderable Benefits

Appraising the risks and uncertainties associated with a project requires such a high order of judgment that the problem should be explicitly faced and appraised by the collective wisdom of those best qualified to make the appraisal. It is only disparities in risk among projects which needs to be allowed for, since the company's cost of

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capital reflects the overall risks. Only when the general character of the company's operations will be significantly altered by the investment will the risk which is reflected in the company's cost of capital be re-valued in the market. In the process of measuring the probable rate of return on each project, the company may be successful in adjusting for the probability of getting the earnings of different types and different years. If so, it is only the dispersion of possible outcomes which constitutes differential risk. For example, a labour saving device might have a lower dispersion of outcomes than a new product. The chances of big, improbable gains or losses are smaller than for a new product. Though measurement of this sort of dispersion is difficult, some headway can sometimes be made by a necessarily arbitrary risk ranking of candidate projects or categories of projects.

Most projects have some added benefits over and above the measurable ones. If excessive weight is given to these imponderables, there is danger that rate of return rationing will be displaced instead of being used to improve executive judgment in choosing among capital expenditures. When a low rate of return project is preferred to a high one on the grounds of imponderable benefits, the burden of proof clearly rests on the imponderables.

Concepts of Measurement

For measuring these four dimensions of a project's return on investment, there are four key concepts:

1. *Futurity*: Future earnings and future outlays of the project are all that matter.
2. *Increments*: Added earnings and added investment of the project alone are material.
3. *Alternatives*: The proper benchmark for measuring added investment and the corresponding added earnings is the best alternative way to do it.
4. *Cash Flow*: After-tax cash flows or their equivalents alone are significant for measuring capital productivity.

1. Futurity

The value of a proposed capital project depends on its future earnings. The past is irrelevant except as a benchmark for forecasting the future. Consequently, earnings estimates need to be based upon the best available projection of future volume, wage rates, price levels, etc. The earnings and ultimate salvage value corresponding to the proposed outlays need to be estimated year by year over the economic life of the proposed facilities and their time shape needs to be taken into account explicitly.

2. Increments

A correct estimate of earnings and investment must be based upon the simple principle that the earnings from the proposal are measured by the total added earnings or savings by making the investment as

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opposed to not making it and that the same is true for the investment amount. Project costs should be unaffected by allocation of existing overheads but should reflect the changes in total overhead and other costs that are forecasted to result from the project. No costs or revenues which will be the same regardless of whether the proposal is accepted or rejected should be included and the same goes for investment.

3. Alternatives

There is always an alternative to the proposed capital expenditure. The alternative may be so catastrophic that refined measurement is unnecessary to reject it. Often there are close alternatives so that an important problem of measuring capital productivity is to make a ladder of depth of alternative investments and measure the added earnings and added investment in a rate of return calculation for a ladder of alternatives to see how far it pays to go. The proper benchmark for the proposal is the next most profitable alternative way of doing it.

4. Cash Flows

To be economically realistic, attention should be directed exclusively at the after-tax flows of cash or cash equivalents which will result from the adoption of the project. Book costs are confusing and immaterial.

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Business Development And New Financing* . . .

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In planning business expansion, management must consider where and how the capital may be obtained. What are the various methods of financing—what will it cost—what bodies in general exert the greatest influence on this problem? Where does the Canadian economy and money market fit in—and what are the advantages or disadvantages in raising capital in the United States?

IF YOU can't finance your expansion from your existing resources, there are only two alternatives (or some combination of them) to consider—you can borrow the money and have creditors to plague you or you can offer some shares of ownership in your business and have partners getting financially fat from your hard work. I'm exaggerating, of course—but the effect in any financing is to create either creditors or partners.

A financing plan is largely a matter of judgment. There is no formula that will produce an answer to the problem, nor is there any way I know of turning the job over to an electronic computer. However, there are certain rough rules to be followed. Perhaps it is not very original but one of the first things to do is to study the financial set-ups of various companies in your own trade or industry. Concentrate your attention on the successful ones. If a certain ratio of debt to equity seems to exist amongst the successful companies, you should be very careful about embarking on a financial programme that will result in an adverse ratio for your company.

As is the case in most business decisions, it is difficult to say with precision that here is the best financing plan. For any particular requirement, it is possible to formulate a number of financial plans, particularly where the amount of money indicates the use of more than one type of security. In these cases, you are always trying to settle in your mind such questions as how much debt? How much equity or ownership money? What kind of debt and what kind of ownership? Always we have to deal with the conflict of the income tax advantages of debt against the peril of creditors taking everything if things go wrong, and in the case of ownership the very natural desire to give up as little as possible.

So, with these brief introductory remarks, let us move on to consider other aspects of our problem. Perhaps we should review briefly some of the distinguishing characteristics of financing instruments used in Canada. Incidentally, most of these remarks are related to the

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affairs of public companies with securities in the hands of the public. We will talk about private companies later on.

DEBT INSTRUMENTS

First Mortgage Bonds

This is the senior long term security that most industrial companies can create, and as the name suggests the underlying security is a registered mortgage of the company's real property—and of course just as in the case of your own house mortgage there is a promise to pay. As it is not practical for the company to contract with each individual bondholder, a trustee acts on his behalf. The terms and conditions of the loan are set out in a lengthy legal document known as a Deed of Trust and Mortgage (Trust Deed). Just a few of the points outlined in a Trust Deed are manner, place and time of paying interest, sinking fund provisions, call provisions, covenants to prohibit payment of dividends in certain circumstances, definition of acts of default, remedies in case of default and so on. The Trust Deed is the place to look to find the rights of borrower and lender. In addition to the security of the mortgage, bonds of this type usually have a "floating charge" on all other assets with the proviso that the borrower has the right to give the usual banking security on accounts receivable and inventory.

Collateral Trust Bonds

Some companies, particularly holding companies, may not own real estate and therefore cannot issue First Mortgage Bonds. However, they could pledge the shares of subsidiary companies with a trustee and issue Collateral Trust Bonds against them. In such a case it would be normal to find the subsidiary companies joining in a covenant prohibiting the mortgaging of their real property. Bonds of this type are not too popular today and probably a better plan for everybody would be a first mortgage issue on the subsidiaries.

Debentures

The securities of municipalities are usually known as debentures but today we are concerning ourselves principally with the financing of private enterprise. The term debenture, when applied to commercial financing, usually means an instrument that is unsecured by a mortgage or pledge of any specific security but it is supported by a floating charge on the company's assets. All of the terms and conditions of the loan are set out in the Trust Deed and a trustee acts on behalf of the interest of the debentureholders.

Notes

This type of debt financing is not too popular in Canada but in cases where it does exist the instrument is nothing more than a promissory note with any conditions endorsed right on the face of the note. However, just to prove you can't generalize about the description of securities, I should mention that the senior security of our various

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finance companies are known as "Collateral Trust Notes"—the security being the pledge of instalment paper that is placed in the hands of a trustee. A trust deed outlines the terms and conditions attaching to these notes.

Term of Debt Financing

It is hardly necessary to say that the term of the financing should not extend beyond the life of the assets. In actual practice, however, you will find that the term is also conditioned by market conditions and historical precedents.

Sinking Fund

Generally speaking you will find in the Trust Deed provisions for retirement of bonds and debentures by means of a sinking fund. Some of the older text books dealing with accounting or business mathematics will show sinking fund problems where the sinking fund monies are invested in securities, usually Government bonds. Modern practice is quite different and today you will find that most sinking funds are set up on a basis where the company is obliged to buy a specified amount of the obligation in the open market each year or failing that to call by lot. This is good protection for the investor because it assures him of a reasonable market for the security in the event that he wishes to dispose of it prior to maturity. From the point of view of the company, depreciation reserves usually should be sufficient to provide the necessary sinking fund monies. The extent of the sinking fund depends largely on the industry and the quality of the security. The sinking fund on a first mortgage utility bond may not be much more than $1\frac{1}{2}$ - 2% per year (a 20 year bond would be 30 - 40% retired by maturity), whereas a 15 year debenture on say a manufacturing business would probably call for a full sinking fund—the more conservative obligation doesn't need the protection of a complete sinking fund.

Income Tax Considerations

As mentioned previously one of the advantages of debt financing is the relatively low after-tax cost. For example, if a bond has a 6% coupon, the cost to the shareholders is just a shade over 3% due to the fact that bond interest is an allowable deduction before tax. Although bond interest is usually deductible there are exceptions. An example would be a case where the proceeds were used to buy shares of other incorporated companies. Dividends received are tax free, so it is hardly reasonable to expect the interest to be deductible. Discount is not allowable, but just recently legal and other costs incurred in creating the issue have been made allowable.

EQUITY OR OWNERSHIP INSTRUMENT

Just as there are many different kinds of debt instruments, we find there are a great number of ownership instruments. However, there are

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two principal classes—preferred shares and common shares. Once again it is dangerous to generalize, as I must back-track and say there is a third class which has characteristics of each.

Preferred shares come in many different types and sizes but basically, as the name suggests, the preferred shareholder is an owner with certain preferences. These preferences usually relate to the payment of dividends or to the return of capital in the event of liquidation, winding up, etc. On the matter of dividends, we find in some cases that the dividend is cumulative, meaning that if it is not paid in any one year it accumulates in the succeeding years and normally dividends on the common shares cannot be paid so long as preferred shares are in arrears of dividends. In some cases, somewhat rare, you will find that the dividend is non-cumulative. This means that if in any one year the dividend is not paid then the right to a dividend for that particular year lapses. The provisions attaching to preferred shares are usually written on the back of the certificate. Usually you will find them written in such small print you will need a magnifying glass to see what they are. In some cases you will find that provision is made for the redemption of preferred shares by means of a sinking fund or a purchase fund. Whereas the sinking fund on a bond issue is usually for so many dollars a year, the sinking fund for a preferred share issue will usually be stated as a certain percentage of the net profit after tax and after payment of the preferred share dividend. For example, 10%, 15%, 20%, etc. A purchase fund usually refers to a provision wherein the company is obliged to use a certain percentage of the company's net profit after tax for the redemption of the issue but only in the event that it can be bought in the market at less than a certain price—usually at a price less than par value. Both of these arrangements have as their object the provision of a market for the preferred shares better than might exist if the market depended entirely on investor interest.

In between straight preferred shares and common shares is that class having characteristics of both. There I am thinking of Class "A" shares which result from a reclassification of the company's previously existing common shares. For example, we might split the existing common into 1 Class "A" and 1 Class "B"—the Class "A" shares having a fixed cumulative preferential dividend, possibly a participating privilege, preference in liquidation or winding up, but limited voting power, if any; the Class "B" shares being straight ordinary common. Class "A" shares resulting from common cannot be made redeemable without running into deemed dividend tax problems through indirect distribution of surplus.

Common shares do not require explanation other than to say that they represent the risks and rewards of ownership and the holders of common shares take the gains or penalties of raising capital in other ways. I think it is safe to say that only in the last ten years have

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industrial common shares acquired investment stature and recognition as being a means of conserving purchasing power in the portfolios of most investors.

Before moving on to the next section, reference should be made to the participating feature of some preferred share issues. Some investment men say a straight preferred is neither fish nor fowl, nor good red herring. As Benjamin Graham would ask derisively, "preferred as to what?" It hasn't the protection of a bond nor the appreciation possibilities of a common. Thus its limited marketability is determined on a yield basis, e.g. if 5% is the going yield at a certain time, it is apparent that a 4% \$100 par preferred share will sell around 80. Sinking funds or purchase funds were the idea of the investment industry to help alleviate this situation. Another method of glamorizing a preferred issue is to incorporate in the dividend arrangement a provision that the preferred shares will participate in further dividends after the common have had a certain minimum return. This of course detracts from the common but it may be the only way you can make your preferred issue saleable.

COMBINATIONS OF DEBT AND EQUITY

Even in the conservative investment business you find attempts to bring out new models, such as is done in the automobile industry. Convertible bonds or debentures are not a post-war invention but they are certainly used much more now than in the past. Convertible bonds or debentures contain a provision that the bond or debenture may be exchanged for certain shares of the company stock at certain prices and within certain time limits. Even conservative investors are aware of the dangers of inflation but with a convertible bond or debenture this problem can be overcome to a large extent. It is rather academic to explain that if the company's shares rise above the conversion price then the debenture automatically will increase in price. Usually the conversion is into common shares of the company but not necessarily so. Convertible preferred shares are similar to convertible debentures in that preferred shares may be exchanged or converted into common shares.

In place of making an issue of bonds, debentures or preferred shares convertible, it may be advisable to attach to the issue stock purchase warrants providing the option to buy certain shares at certain prices and for a certain period of time. The subsequent value of these warrants will depend on the market action of the company's shares to which they relate.

Over the last ten years most investors have come to realize the advantage of equity instruments and yet their circumstances have been such that they did not want to take the risk of owning common stock. For these people, convertible bonds, debentures, convertible preferred shares or issues with stock purchase warrants attached have provided

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some very good securities. At the same time the issuers of these securities have been able to avoid the dilution of their equity which would have occurred in the event that straight common shares had been sold.

COST OF FINANCING

There are two elements of cost for you to consider in the financing. First, is the initial cost of creating the security and placing it on the market. These costs include the legal fees necessary for the creation of the issue, the auditor's fee for the preparation of the earnings record, and balance sheet, and pro-forma balance sheet for the prospectus, the cost of printing the necessary certificates and, last but not least, the discount or commission to be paid to the underwriter who purchases the issue.

The other element of cost I'll refer to as the annual cost, either by way of interest or dividend. We have seen previously that there are important income tax considerations here. Under normal circumstances the interest on a bond or debenture issue will be deductible before income tax while dividends on a preferred or common share issue come after tax.

The competitive nature of the money market needs great emphasis. Securities are compared by many people and in many different ways and in each case the investor is looking for the best value for his money.

When a new security is offered to investors, it competes immediately with every other security on the market. Whether it is designed for income, capital appreciation, safety of capital or what have you it must offer better value than anything else already available. Otherwise, why should anybody buy it? Remember, a security is not like a rare oil painting that cannot be duplicated. There are hundreds of securities—many are safe as the Bank of England, many offer capital appreciation prospects (if something doesn't happen). Therefore, you can see how necessary it is for a new issue to be attractively priced.

In addition to a new security competing with other securities, you must also remember that the whole security market is competing with other investment media, such as real estate mortgages, trust company deposits and so on. It seems safe to say that the income yields offered on most types of investment, whether they are securities or not, is in line with the risk.

To give you some idea of how interest rates have changed in the last decade, I would like to call your attention to some of the first mortgage bond issues of the B.C. Electric Company.

Date of Issue	Coupon	Offering Price	Current Price	Current Yield
January, 1947	3 $\frac{1}{4}$ %	100	86	4.97%
February, 1949	3 $\frac{3}{4}$ %	100	88	5.09%
March, 1950	3 $\frac{1}{2}$ %	100	81	5.13%
January, 1957	5%	93 $\frac{1}{4}$	96	5.32%

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In case anybody is wondering why the $3\frac{1}{4}\%$ bonds aren't lower than the $3\frac{1}{2}\%$ issue, it's because the latter is of longer maturity. Incidentally, I guess all you high income chaps know that discount bonds are better for your portfolios taxwise. One point I didn't bring out on new issues is that they are usually available in size (Trans Canada Pipe units excepted!) This is quite important to the institutional buyers.

CANADIAN MONEY MARKET

The Canadian money market is quite a complex thing. The heart of the money market is, of course, the Bank of Canada and most of us have noticed how much it is in the news these days. Its function is very well described in the preamble to the Bank of Canada Act. "Whereas it is desirable to establish a central bank in Canada to regulate credit and currency in the best interests of the economic life of the nation, to control and protect the external value of the national monetary unit and to mitigate by its influence fluctuations in the general level of production, trade, prices and employment so far as may be possible within the scope of monetary action and generally to promote the economic and financial welfare of the Dominion." That, my friends, is the big job which the Bank of Canada has to do, day in and day out, year in and year out. If you are not already familiar with it, I would like to commend to your attention the 1956 Annual Report of the Governor of the Bank of Canada to the Minister of Finance. That is a public document of which you can obtain a copy by writing to the Bank of Canada at Ottawa. In it you will find a very complete and lucid explanation of the credit condition existing throughout 1956 and the efforts and methods used by the Bank of Canada to deal with the situation.

The function of the chartered banks in our money market is well-known and should not require explanation. The suggestion by the Bank of Canada that our banks should regard their savings deposits as something different to the current account deposits is a very interesting one and one which we all should try to understand. I am no expert on the subject but I do know, as I am sure you do, that the banking system of Canada is regarded as one of the strongest in the world, and, therefore, changes in the operating principles should be undertaken only with the greatest of care.

The Industrial Development Bank is another Government agency, although it is in corporate form and its shares are owned entirely by the Bank of Canada. The purpose of IDB is to assist in financing and development of ventures that could not be financed through the ordinary commercial channels. There are certain conditions to be met to be eligible for an IDB loan and usually a manufacturing or processing function must be present in the development. Service industries or warehousing operations cannot get assistance from the IDB.

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Insurance companies and other investing institutions, such as trust companies and fraternal associations, are important factors in our Canadian money market. Directly or indirectly these institutions are investing in trust for others and generally speaking their investment policies are very conservative. Usually, their obligations are fixed dollar obligations and for that reason they are inclined to invest in fixed dollar securities. By that I mean bonds or debentures or instruments of loan. That doesn't mean that these people do not invest in preferred or common shares. In absolute dollar amounts we would be very well off indeed if we had the common stock portfolio of even some of the smaller insurance companies. However, in our thinking we should consider them more as bond buyers than stock buyers.

In another section of our Canadian money market we find the investment dealers and the underwriters. These are the people to whom you turn when you want advice on the kind of issue to create and they are also the people who will take the risk of buying the issue from you and seeing that it is distributed to investors.

One of the reasons that securities are attractive investments is the fact of their marketability. This is the point where stock brokers and stock exchanges come into the picture. Whereas the investment dealers and underwriters concern themselves with the creation and marketing of new issues of securities, the stock brokers and stock exchanges are concerned with issues already on the market. In Canada most firms in the investment business act as investment dealers and stock brokers. Nevertheless, these two functions are quite distinct and separate. The job of the stock exchanges is to provide a meeting place and an auction room for the stock brokers. The stock exchange lays down the rules for trading and also arranges for the necessary publicity of the sale and purchase transactions.

MECHANICS OF A TYPICAL CANADIAN SECURITY OFFERING

Now let's suppose that our company has reached the stage where we want to go ahead with the project and we need to raise the money. Just what are we going to do? If investment dealers in your city are as wide awake as they are in Vancouver the chances are that some dealer is aware of the situation in your company and has been cultivating some of the senior executives. If his efforts have been successful and well received, the chances are you will get in touch with him. If no investment dealer has been concerned with the company's affairs the chances are that the president or some of the other senior officials have investment dealer transactions. In any case you will take your problem to an underwriter.

The underwriter will hear your story and then will begin an extensive investigation of your business. It will include an investigation of the industry in which you operate, the future outlook for it, the future outlook for your particular company, the quality and effective-

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ness of your management, a complete review of all your recent financial statements, a review of all your corporate records and incorporation papers, etc., etc. In fact, by the time a competent underwriter has completed his investigation of your business he will know more about your company and the industry in which you operate than most of the executives in the company. This, of course, applies only in the event of your first public financing. Now we are at the stage where the underwriter has decided that he is willing to consider your financing.

At this point, I should say that ordinary Canadian practice is for underwriting to be taken on a non-competitive basis. By this I mean that once you have started to negotiate with one underwriter you do not deal with another. For example, if you started to discuss an issue with A. B. & Company, you would not mention the matter to another dealer unless you had broken off negotiations with the first party. Normally having started your financing with A. B. & Company, you would also go back to that firm in future years. However, there is nothing to prevent you from going to another firm, if that is your wish.

Now getting back to the deal which we were considering. Having completed his investigation and being satisfied that the business is sound and that the management is effective and so on and so forth, we would get down to the stage of deciding on the type of security. Whether it is to be a bond, a debenture, a preferred share issue or a common share issue will depend on many factors, including, of course, the requirement of the company's capital structure and also conditions existing in the security market. This is where judgment enters the picture. The financing must be right for the company but it must also be right for the market. The underwriter wants to create a good security from the point of view of the company, a good security from the point of view of the investor, and he wants to get fair pay for his work and risk. Legal and accounting considerations are very important in the creation of new securities. Much of the work will be done by the company's own counsel and counsel for the underwriters. Theoretically, the company's counsel does the work and the underwriter's counsel checks it but in cases where the company's counsel is not experienced in these matters it is much better for everybody if the underwriter's counsel originates the work and the company's counsel checks it from the point of view of the company. The legal work refers not only to the creation of the securities but also to the preparation of the prospectus. The accounting work undertaken by the company's auditors usually consists of the preparation of an earnings certificate covering a period of anywhere from seven to ten years. The earnings certificate gives a breakdown of the company's profit for the period covered by it and its purpose of course is to give the investor an indication of how the company has done in the past. In addition to the earnings certificate, the prospectus will also include a balance sheet and usually a pro-forma balance sheet giving effect to the proposed new issue of securities.

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Brief reference should be made to the so called Blue Sky Laws of the various provinces, this phrase meaning the provincial statutes that regulate the sale of securities in each province. The intent of these statutes and the provincial commissions or departments that administer them is to see that adequate disclosure is made in the prospectus describing the security and seeing that the prospectus is available to every person who places an order for the security. The mechanics of clearing an offering are the responsibility of the underwriter but he will need the assistance of company officials. The securities may not be offered until they have been cleared in each province.

The marketing procedure followed by the underwriter depends largely on the size of the issue. If it is comparatively small, he will sell it entirely to the public through his own retail salesmen. However, for this example, let's assume the issue is substantial, say anywhere from \$25 to \$50 million. In such a case, the chances are there are not only one but probably two principal underwriters. The principal underwriters are the dealers who conduct the negotiations for the terms and price of the issue with the company concerned. The next group of dealers is known as the banking group. The principal underwriters sell the issue to a banking group including themselves at a slight step-up over their cost from the company. By tradition banking groups remain pretty much the same year after year on any particular financing. For example, if a firm of investment dealers has a position in the banking group of XYZ Company's securities, they expect to be included in the banking group whenever there is a new issue for that particular company. Usually the percentage of their participation will be just about the same as they have had in previous issues. Members of a banking group are not expected to accept commitments willy-nilly but if a commitment in an issue is turned down it is deemed to break the banking group connection and thereafter the firm turning down the banking group offer would not expect an invitation in future issues of that particular company. The next group of dealers is known as the selling group and these dealers acquire their securities from the banking group through the principal underwriters who also act as managers of the banking group. For example, a certain investment dealer might have a banking group commitment of one million dollars in a certain issue but at the time he is given the commitment he is advised that 50% of his commitment is to be withheld from offering to a selling group. That means that on his one million dollar commitment his organization is called upon to sell only \$500,000, provided that the banking group managers get orders from the selling group dealers to take up the securities they have withheld from the banking group members. Of course, if selling group members do not send in sufficient orders to take up the securities withheld from the banking group, then the banking group members are called upon to take up pro rata their share of the remainder. The selling group dealers offer the securities to the public but only in

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accordance with the terms of the selling group agreement which usually provides amongst other things that the securities must not be offered before a certain date, the offering price must be so and so and the date when the securities will be available is also announced.

CANADIAN CORPORATE FINANCING IN THE LAST TEN YEARS

The following table showing the various categories that have been sold in each year will give you an idea of the extent of financing that has been done in Canada over the last ten years by means of security issues.

The figures for the Government of Canada are the only ones where refunding would be a material factor.

FINANCING IN CANADA

(Not including Treasury Bills, Deposit Certificates and Short Term Notes)

	1946	1947	1948	1949
Government of Canada	\$ 889,203,050	\$ 267,375,850	\$1,214,500,000	\$ 693,000,000
Provincial	87,520,000	135,707,000	194,615,000	262,256,000
Municipal	135,107,785	253,610,312	114,498,595	153,263,837
Railway	82,100,000	27,080,000	101,500,000	77,000,000
Public Utilities	317,261,000	201,706,500	223,160,000	348,950,000
Industrial and Misc.	296,444,288	261,928,000	134,711,000	123,619,000
TOTAL BONDS	1,807,633,123	1,147,407,662	1,982,984,595	1,658,088,837
Preferred Stock	96,788,633	112,315,408	37,226,140	23,301,750
Common Stock	30,705,710	7,561,865	24,648,397	19,709,822
TOTAL STOCKS	127,494,343	119,877,273	61,874,537	43,011,572
TOTAL ALL FINANCING	\$1,935,127,466	\$1,267,284,935	\$2,044,859,132	\$1,701,100,409

	1950	1951	1952	1953
Government of Canada	\$2,089,139,750	\$ 565,000,000	\$ 791,048,450	\$1,960,000,000
Provincial	263,910,000	337,623,000	257,590,000	436,607,900
Municipal	181,075,000	254,976,993	217,133,220	261,494,716
Railway	88,000,000	49,705,000	35,000,000	50,525,000
Public Utilities	185,520,000	111,075,000	283,675,000	29,680,000
Industrial and Misc.	324,615,303	349,369,400	384,675,000	280,095,800
TOTAL BONDS	3,132,260,053	1,667,749,393	1,969,121,670	3,018,403,416
Preferred Stock	37,207,850	25,410,000	20,883,000	71,303,296
Common Stock	41,867,230	126,198,288	103,207,691	135,860,688
TOTAL STOCKS	79,075,080	151,608,288	124,090,691	207,163,984
TOTAL ALL FINANCING	\$3,211,335,133	\$1,819,357,681	\$2,093,212,361	\$3,225,567,400

	1954	1955	1956	Total
Government of Canada	\$2,779,000,000	\$1,354,000,000	\$1,612,000,000	\$14,205,267,100
Provincial	403,595,000	435,160,000	557,412,000	3,371,995,900
Municipal	287,688,952	294,504,826	274,480,219	2,427,834,455
Railway	504,520,000	—	—	1,015,430,000
Public Utilities	76,250,000	89,240,000	55,600,000	1,922,117,500
Industrial and Misc.	478,904,500	561,683,500	634,587,900	3,830,630,691
TOTAL BONDS	4,520,958,452	2,734,588,326	3,134,080,119	26,773,275,646
Preferred Stock	87,885,000	163,448,328	160,132,950	835,902,355
Common Stock	104,438,975	48,593,388	159,744,922	802,536,976
TOTAL STOCKS	192,323,975	212,041,716	319,877,872	1,638,439,331
TOTAL ALL FINANCING	\$4,713,282,427	\$2,946,630,042	\$3,453,957,991	\$28,411,714,977

COST AND MANAGEMENT RAISING CAPITAL IN THE U.S.A.

Personally I can't see any particular advantage for the average corporation raising money in the United States. There are, of course, some situations where by reason of the size the U.S. market is the only place to go. Recently, we have seen the completion of the Trans Canada Pipe Line financing. That is the biggest deal in recent Canadian history and of approximately \$233 million in all types of financing, \$101 million was raised in Canada. The public participation in the financing was in the form of units consisting of subordinated debentures and common shares. Of \$120 million total, approximately \$80 million was placed in Canada. From these figures, I think that you will agree that the Canadian market can absorb securities in quite worthwhile volume. Proposed offerings for the United States must be cleared by the Federal S.E.C. and this is usually costly and time consuming.

FINANCING THE PRIVATE COMPANY

Long term financing for the private company is often a difficult problem. If the requirement is less than \$150,000, a public issue is hardly practical by reason of cost because so many of the expenses related to the issue are relatively fixed.

For industries which can qualify, IDB may be the answer. This of course is loan money with a comparatively fast payback, seldom more than ten years. If there is sufficient unencumbered real property it may be possible to get a mortgage loan from an insurance company or other similar type of institution. A well established company should try this approach first where a loan seems suitable.

Equity money is often needed by small growing companies and this is the one area that is not covered by the various components of our Canadian money market. For equity of \$50,000 to \$150,000 reference to private capitalists is about the only source. Transactions such as this are often handled on an agency basis by investment dealers on a private placement basis.

Perhaps the best advice for people concerned with small companies is to recommend that the problem be discussed with an investment dealer of underwriting experience. He will usually be able to make suggestions without any obligation to you.

PERSONALS

Jacques Légaré, C.G.A., a general member of the Quebec Chapter, has been appointed Chairman of the Certified General Accountants' Association (Quebec Section) for the season 1957-58.

Student Section . . .

EXAMINATIONS, 1956

ACCOUNTING I.

QUESTION IV (10 marks)

Describe the operation of a voucher system, explaining the purpose of each stage, and list at least three of its advantages and three disadvantages.

SOLUTION 4.

A Voucher System is an accounting and control technique,—specially designed to protect and record the purchases and cash disbursements of a business organization. It replaces the older Purchase Journal—Accounts Payable Ledger—Cash Disbursements Journal System.

A Voucher System uses four accounting and control mechanisms: Vouchers, A Voucher Register, Cheques and a Cheque Register.

The Voucher itself is a printed form,—designed to satisfy the control techniques suited to and selected for the particular business operation. In structure, it generally provides for the following:

- A. Statistical data:
 - 1. Date.
 - 2. Serial number.
 - 3. In whose favour issued.
- B. Controls:
 - 1. Purchase invoice list.
 - 2. Accounting distribution.
 - 3. Control mechanisms satisfied—checked by:
 - 4. Prepared by:
- C. Approval:
 - 1. Payment approved by:
- D. Payment record:
 - 1. Date paid.
 - 2. Cheque number.

In preparing a Voucher, the voucher clerk begins by entering the date, the next consecutive serial number, and the name of the vendor or payee on one of his Voucher blanks. He then inspects the invoice, or other document required to support the Voucher, for evidence that the following control mechanisms where applicable have been satisfied:

- | | |
|-----------------------------|-----------------------------|
| 1. Purchase authorized by: | 5. Mathematics checked by: |
| 2. Prices approved by: | 6. Received by: |
| 3. Terms approved by: | 7. Inspected by: |
| 4. F.O.B. Point checked by: | 8. Accounting distribution. |

He then lists the invoice and its accounting distribution on the face of the Voucher in accordance with items B-1 and B-2 above. If the system provides that all invoices in any month from the same vendor be processed in the same Voucher, he will list those invoices on the face of the Voucher and enter his accounting distributions as early as possible after the close of the month. Item B-4 calls for the initials of the clerk preparing the Voucher.

The Voucher clerk then submits the Voucher to a senior financial officer for approval.

COST AND MANAGEMENT

The Vouchers are then entered in the Voucher Register. The Voucher Register is a special journal designed for the Voucher System. The columnar headings, reading from left to right, may be as follows:

- | | |
|-------------------------|--|
| 1. Date. | 8. Manufacturing expense dr. |
| 2. Payable to. | 9. Selling expense dr. |
| 3. Voucher number. | 10. Administrative and general expense dr. |
| 4. Vouchers payable cr. | 11. General ledger. |
| 5. Paid. | 11-a. Account name. |
| 5-a. Date. | 11-b. Account number. |
| 5-b. Cheque number. | 11-c. Amount dr. |
| 6. Raw materials dr. | 11-d. Amount cr. |
| 7. Finished parts dr. | |

The total of the Voucher is entered in column 4,—the distribution in columns 6 to 11. At the close of the accounting period, these columns are added and cross-balanced. Columns 4, 6, 7, 8, 9 and 10 are posted in total to the general ledger, and columns 11-c and 11-d in detail.

After entry in the Voucher Register, the Vouchers are then filed in order of date scheduled for payment.

After a cheque has been written, the voucher clerk enters the date paid and cheque number on the face of the Voucher and in columns 5-a and 5-b of the Voucher Register.

The Cheque is then entered in the Cheque Register, the columnar headings of which are as follows:

- | | |
|--------------------|---------------------------|
| 1. Date. | 5. Vouchers payable dr. |
| 2. Payee. | 6. Purchase discounts cr. |
| 3. Voucher number. | 7. Bank cr. |
| 4. Cheque number. | |

At the end of the month, columns, 5, 6 and 7 are added, cross-balanced, and posted in total to the general ledger controlling accounts.

Advantages:

1. A Voucher System provides more adequate protection in the cash disbursements area.
2. It treats all purchases and cash disbursements in a single consistent manner.
3. It dispenses with the need for an Accounts Payable ledger.

Disadvantages:

1. There is a certain amount of additional work in preparing Vouchers.
2. For purposes of month end closings, it is somewhat slower.
3. Some accountants claim that the Voucher System is entirely too rigid for their purposes.

NOTE:

Each accountant will design his own Voucher System to meet the particular needs of his business.

COMMENT—Question IV.

This was rather well handled on the whole. Again, however, some students failed to appreciate that this question worth 10 marks should have been given 10% of their time. It looked in some cases as if they scribbled anything down hoping to get credit for it.

